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CIA-RDP86-00513R000618910001-5

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CIA-RDP86-00513R000618910001-5"

#189

ISKRA, A.L.

TO

39936

S/258/62/002/001/0^~013

I028/I228

26.5200

AUTHOR:

Iskra, A. L. (Moscow)

TITLE: Calculation of heaters of a liquid undergoing forced motion

PERIODICAL: Inzhenernyy zhurnal, v. 2, no. 1, 1962, 17-28

TEXT: The heating of a liquid, flowing along a pipe at a rate  $G$ , from a given initial temperature  $t_{si}$  to a required final temperature  $t_{sf}$  by an electric heater of temperature  $t_h$  in contact with the liquid is considered for both stationary and non-stationary regimes. In the stationary case, the released heat is entirely transmitted to the liquid stream, and the following equations are established:

$$d\bar{t}_s = (t_h - \bar{t}_s)du$$

$$\bar{t}_h - \bar{t}_s = W$$

where  $\bar{t}$  = non-dimensional temperature,  $u$  = non-dimensional length of the heater (depending on  $G$  and the wetted perimeter of the heater),  $W$  = non-dimensional magnitude (depending on the electronic power supplied to the heater). As seen, one of the three variables  $\bar{t}_s(u)$ ,  $\bar{t}_h(u)$ , and  $W(u)$  can always be specified arbitrarily. The corresponding equations for the non-stationary case are:

$$\partial \bar{t}_s / \partial u = \bar{t}_h - \bar{t}_s$$

Card 1/2

X

Calculation of...

S/258/62/U02/001/002/013  
I028/I228

$$\partial I_h / \partial v + I_h - I_s = W$$

with the boundary conditions

$$I_s(0, v) = f_1(v)$$

$$I_h(u, 0) = f_2(u)$$

where  $v$  is a non-dimensional time coordinate. These equations are integrated, and some concrete examples solved. The influence of the different parameters on the heater size is analysed. The method of calculation, and the results obtained, can be extended to the case of different types of heaters. There are 5 figures.

SUBMITTED: November 28, 1961

Card 2/2

X

S/258/63/00.1/001/007/022  
E200/8535

AUTHOR: Iskra A.L. (Moscow)

TITLE: Transient processes when charging with or shedding pressure in the equalization chamber of a wind tunnel with preheater

PERIODICAL: Inzhenernyy zhurnal, v. 3, no.1, 1963, 55-62

TEXT: The problem is considered of filling the prechamber of a wind tunnel, fitted with a heater, using a regulating inlet valve and pressure relief by means of a safety valve. The obtained solutions are applicable in the selection of a regulation system, safety devices and systems of protection of the prechamber and the heater from excessive pressure gradients under steady and nonsteady state regimes. Cases investigated are: a) steady flow; b) pressure changes according to  $P_2 = P_2(t)$ ; c) mass flow through inlet valve varies with time  $Q_0 = Q_0(t)$ ; d) safety valve working. In all cases it is assumed that  $P_1 - P_2 = \text{aerodynamic resistance of preheater and } Re > Re_{crit}$ .  
a) If  $P_2$  is known, then other values can be obtained from  $C_w = Q_1 w_1 = C_2 w_2 = Q/F_a = \text{const}$  and successive approximations of Card 1/4.

Transient processes when charging ... S/258/63/003/001/C07/022  
E200/E535

$P_2/P_1$ .

b) Assume that  $T_2$  is constant, then the equation of charging  $v_2$  is

$$F_2 v_2 - F_\infty \left( \frac{2}{\kappa + 1} \right)^{\frac{1}{\kappa - 1}} a_\infty = \frac{v_2}{P_2} \frac{dP_2}{dt} \quad (2.3)$$

from which it is possible to find the velocity at the point 2 and  $Q_o(t)$ , where  $F$  - cross-sectional area,  $Q$  - mass flow,  $v$  - velocity,  $v = P_2/P_1 = p_2/p_1$ .

c) Solution is based on:

$$\frac{dP_2}{dt} + AP_2 = BQ_o(t) \quad (3.1)$$

where

$$A = \frac{1}{V T} F_\infty \left( \frac{2}{\kappa + 1} \right)^{\frac{1}{\kappa - 1}} a_\infty, \quad B = \frac{RT_2}{V JT} \quad (3.2)$$

$$\frac{v}{\sqrt{T}} = v_1 \frac{1}{\sqrt{T_1}} \frac{T_2}{T_1} + v_a \frac{1}{2} \left( 1 + \frac{1}{\sqrt{T_1}} \frac{T_2}{T_1} \right) + v_2$$

Card 2/4

Transient processes when charging ... S/258/65/003/001/007/022  
E200/BSNS

d) Let  $P_2/P_1 = 1$ , then the basic equation is

$$\frac{dP_2}{dt} + A_1 P_2 = RQ_0 \quad (4.3)$$

where

$$A_1 = \frac{1}{V_T} \left[ F_3 \left( \frac{2}{\kappa+1} \right)^{\frac{1}{\kappa-1}} - a_{x3} \frac{T_2}{T_1} + F_{\infty} \left( \frac{2}{\kappa+1} \right)^{\frac{1}{\kappa-1}} \right] \quad (4.4)$$

$$B = \frac{RT_2}{V_T}, \quad V_T = V_1 \cdot \frac{T_2}{T_1} + V_a \cdot \frac{1}{2} \left( 1 + \frac{T_2}{T_1} \right) \cdot V_2$$

Case (d) is solved for the two conditions of  $Q_0 = \text{const}$  and  $Q_0 = Q_0(t)$ . All cases are illustrated by numerical examples. There are 7 figures.

SUBMITTED: June 12, 1963.

Card 3/4

Iskra, A. S.

AID P - 992

Subject : USSR/Engineering

Card 1/1 Pub. 11 - 6/13

Authors : Slutskaya, T. M. and Iskra, A. S.

Title : High strength butt welds of 30 KhGSA and 38KhA steels

Periodical : Avtom. svar., #5, 58-65, S-0 1954

Abstract : The method of welding of structural alloyed steels is described. Complex alloying and thermal treatments of welded-over metal are used for obtaining a weld strength equivalent to the basic metal. Chemical, macro-and micro-structural analysis of the weld is presented together with the results of mechanical tests. Eight tables, 5 photographs and 5 Russian references (1947-53).

Institution : The Institute of Electric Welding im. E. O. Paton

Submitted : Je 19, 1954

TSKRA, A-S.

AID P - 5258

Subject : USSR/Engineering

Card 1/1 Pub. 11 - 9/15

Authors : Sterenbogen, Yu. A., V. V. Chernykh, D. P. Antonets,  
and A. S. Iskra (Electrowelding Institute im. Paton,  
Nov-Kramatorsk Heavy Machine-Building Plant, Zhdanov  
Machine-Building Plant)

Title : Special features of the resistance slag welding of  
22K plate steel.

Periodical : Avtom. svar., 4, 96-103, Ap 1956

Abstract : The authors describe some chemical and mechanical  
characteristics of the 22K plate steel, the welding of  
this steel 200 to 270mm thick, and the tests given the  
finished specimens. The Sv10Q2 electrode wire and the  
FTs-7 flux were used. Five tables, 2 photos and 1 drawing.

Institution : As above

Submitted : No date

T. SKRA, A. S.

FORM 1 BOOK INFORMATION

25(1)

SOV/3421

Akademicheskii Uchebnyi Klyev, Institut elektrosvarki Leningradskii 16-0. Petros.  
Produktivnoe sverzhie spokoibor erzhd. v perevobamost', vyp. 2 (introduction of  
New Welding Methods in Laboratory Collection of Articles, No. 2). Klyev, Gos.  
Sov. Nauk, 1959. 115 pp. Leningrad University Sov. 1959. 156 p. Kravna slyp. Izdavt.  
Sjed. 5000 copies printed.

Ed.: V. Gerasimov; Sud. Ed.: S. M. Matveevich.

PURPOSE: This book is intended for workers in the welding industry.

CONTENTS: The book contains a discussion of welding techniques and problems by  
group of scientists and welders. Much attention is given to problems in the  
application of new methods of mechanized welding and electron-beam welding.  
This is the second collection of articles under the scientific preparation and  
published by the Institute elektrosvarki Leningrad 16-0. Petros. (Scientific  
Electrical Welding Institute Ye.O. Petros.). The preface is written by S. S. Skra,  
Academician of the Ukrainian Academy of Sciences and Writer of the Lenin Prize.  
There can be no argument.

Editor: V. I. Tikhonov [Candidate of Technical Sciences].

Editor: V. M. Gerasimov [Candidate of Technical Sciences].

Editor: V. O. Petros [Electric Welding Institute Leningrad 16-0. Petros.]. D. Z.

Editor: V. I. Matveevich [Laboratory served Leningrad 16-0. Petros.].

Editor: V. I. Matveevich [Editor-in-Chief, Scientifically technical journal Sovetskaya

Elektronika i radiofizika].

Editor: V. V. Chernov [Engineer] Sovetskaya Elektronika i radiofizika.

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[Candidate of Technical Sciences], S. S. Skra [Candidate of Technical Sciences].  
Editor: V. V. Chernov [Candidate of Technical Sciences]. Institute elektrosvarki Leningrad  
16-0. Petros. [Editor-in-Chief, scientifically technical journal Sovetskaya Elektronika i  
radiofizika]. D. Z. [Editor-in-Chief, scientifically technical journal Sovetskaya Elektronika i  
radiofizika].

[Candidate of Technical Sciences], V. V. Chernov [Candidate of Technical Sciences].

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ISKRA, A.S.

## PHASE I BOOK EXPLOITATION

SC/5078

Akademija nauk UkrSSR, Kijev. Institut elektrosvarivaniya

Vydavnytsche natsional'noj spetsobravtov "pravdahlebmost", obornik statey, typ. 3. (Introduction of New Welding Methods in Industry). Collection of Articles. v. 3. Kijev, Gos. Izd-vo tehn. literatury, 1960. 207 p. 5,000 copies printed.

Sponsoring Agency: Ordona Trudorogo Krassogo Znameni Institut elektrosvarivaniya Akademii Nauk Ukrainskoj SSR. Sponser: Potona Akademii Nauk Ukrainskoj SSR.

Ed.: M. Pisarenko; Tech. Ed.: S. Matusevich.

PURPOSE: This collection of articles is intended for personnel in the welding industry.

COVERAGE: The articles deal with the combined experiences of the Institut elektrosvarivaniya imeni Ye. O. Patona (Electric Welding Institute imeni Ye. O. Paton) and several industrial enterprises in solving scientific and engineering problems in welding technology. Problems in the application of new methods of mechanized welding and electronarc welding in industry are discussed. This is the third collection of articles published under the same title. The foreword was written by B. Ye. Paton, Academician of the Academy of Sciences Ukrainian SSR and Lenin prize winner. There are no references.

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Feketa, A. S. [Engineer], Yu. A. Stepanchuk [Candidate of Technical Sciences], V. H. Kurnodarsky [Engineer], Electric Welding Institute imeni Ye. O. Paton], D. I. Antonov [Engineer], Zhdanovskiy zavod imeni T. Ilichia [Zhdanov Plant imeni T. Ilichia], V. I. Radinovich [Engineer, Barnaul'skiy zavod "Byty sayov" [Barnaul Boiler Plant]], and V. V. Churaych [Engineer, Novokuznetsk Machinery Plant]. Electrosila. Welding of Steel-Plate Structures 17	
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1.2300 also 1573

22951

S/125/61/000/007/007/013  
D040/D113

AUTHORS: Slutskaya, T.M., and Iskra, A.S.; Ravin, M.M. (Moscow)

TITLE: Electro-slag welding process for 30-70 mm thick 30KhGSA steel

PERIODICAL: Avtomaticheskaya svarka, no. 7, 1961, 65-70

TEXT: The application of the electro-slag welding process to 30XГСА (30KhGSA) steel is investigated. Data were obtained under laboratory and shop conditions. Joints of up to 70 mm thickness were welded by an A-501M (A-501m) walking magnetic welder. Direct current with reversed polarity, an 18ХМА (18KhMA) electrode wire 2.5 mm in diameter, and an AH-8 (AN-8) flux were applied. Welding was done without traverse electrode oscillations. A special device was built for moving the welder off the workpiece. The test welding arrangement is illustrated (Fig. 1). The welding conditions finally chosen are as follows (Table 2):

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## Electro-slag welding process...

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D040/D113

Metal thickness, in mm	Number of electrodes	Electrode feed, in m hr (per 1 wire)	Current, in amps (per 1 wire)	Voltage (in volts)	Slag bath depth, in mm	Dry electrode throat, in mm
70	2	180	300-325	34-36	40-45	35
30	1	180	275-300	40	30	35

The heat treatment is as follows: tempering at 690°C, oil quenching starting at 910°C and subsequent tempering at 510-550°C with cooling in air; 1 mm of the cross section of the metal is soaked for 3 min. The chemical composition of the steels and electrode wire used in experiments was (Table 1) as follows:

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Electro-slag welding process...

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Metal

	% Composition						
	C	Si	Mn	Cr	Mo	S	P
30KhGSA, 70 mm thick	0.32	0.93	0.90	0.94	-	0.029	0.029
30KhGSA, 30 mm thick	0.27	1.0	0.86	0.85	-	0.027	0.014
18KhMA wire	0.18	0.28	0.55	1.05	0.24	0.018	0.024

The following conclusions were drawn: (1) Standard 18KhMA wire and an AN-8 flux can be used for electroslag welding of 30KhGSA steel; (2) In the electro-slag welding of up to 70 mm thick 30KhGSA steel joints, neither preheating nor heating during the process is required; (3) The developed welding process ensures that the joints in 30KhGSA steel are sound and have satisfactory mechanical properties; (4) The strength of 30KhGSA steel joints after heat treatment equals 0.9 ~ 0.95 of the base metal strength; (5) The impact toughness of the weld metal and the metal near the welding area, after the above-described heat treatment, is higher than that of the base metal. There are 8 figures, 6 tables and 2 Soviet-bloc references.

Card 3/5

22951

S/125/61/000/007/007/013  
DO40/D113

Electro-slag welding process...

ASSOCIATION: Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im. Ye.O. Patona AN USSR (Electric Welding Institute "Order of the Red Banner of Labor" im. Ye.O. Paton AS UkrSSR) (Slutskaya, T.M. and Iskra, A.S.)

SUBMITTED: January 18, 1961

Card 4/5

MAKARA, A.M.; ISKRA, A.S.; YEGOROVA, S.V.; YUNGER, S.V.; GORKUNENKO, G.N.;  
NIKUYKO, N.A.; ZANDBERG, S.A.; BRONSHTEYN, L.M.

Technology of electric slay welding of petroleum refining and  
chemical apparatus without normalization. Avtom. svar. 18  
no.5:11-16 My '65. (MIRA 18:6)

1. Institut elektrosvarki im. Ye.O. Patona AN UkrSSR (for Makara,  
Iskra, Yegorova). 2. VPTIKhimnefteapparatury (for Yunger,  
Gorkunenko, Nikuyko). 3. Volgogradskiy zavod im. Petrova (for  
Zandberg, Bronshteyn).

18(5)

SOV/128-59-6-12/25

AUTHOR: Khakhalin, B.D., Candidate of Technical Sciences,  
Smolyakov, A.N., and Iskra, B.A., Engineers

TITLE: On the Question of Unequal Wall Thickness of Centrifugally Cast Pipes

PERIODICAL: Liteynoye Proizvodstvo, 1959, Nr 6, pp35 - 37 (USSR)

ABSTRACT: Presently, two basic pouring methods (for centrifugal casting of cast iron water pipes) are used: sand molds and chilled metal dies. When pouring metal dies, the walls of the pipes differ in their thickness, those differences being greater than when pouring in sand molds. Probably this has been generated either by the imperfect casting method or by the imperfection of the pipe spinning machine. The author made one experiment to cast pipes of 300 mm in diameter on a pipe spinning machine type NIIITMAsh, 5.430 mm model, to determine the influence of the technological and the constructive factors on the thickness of the walls of the pipes. A typical result of the 37 tests made was that the

Card 1/2

SOV/128-59-6-12/25

On the Question of Unequal Wall Thickness of Centrifugally Cast Pipes

thickness of the walls was thinner at the funnel-shaped openings and at the smooth ends of the pipes, than at the center or half-length. Three tables list the results gained on various wall thickness. These results are to be explained by the difference in speed of the rotations, by the difference in spreading the liquid metal, and by the irregular flow of the metal (controlled upon estimation by sight). Based upon these tests, a table had been established serving as a practical guide when centrifugally casting water pipes. It establishes the different thicknesses of the wall (given in mm) by the variation of the speed of the pipe spinning machine( given in m/sec) for the distance (given in meter) from the funnel-shaped opening to the smooth end of the pipe. To achieve this relation in a mechanical way the authors designed a spinning machine with hydraulic control regulating the flow of the liquid metal according to the speed of the pipe spinning machine. There are 6 graphs, 2 diagrams, and 7 tables

Card 2/2

ISKRA, F.G.

Development of Russian pathology based on the teachings of I.P.Pavlov  
and the struggle against Virchow's theories. Medich. zhur. 23 no.1:  
74-82 '53.

(MLRA 8:2)

(PAVLOV, IVAN PETROVICH, 1849-1936)  
(VIRCHOW, RUDOLPH, 1821-1902)  
(PATHOLOGY)

ISKRA, I.G.

Medical use of antireticular cytotoxic serum (ATeS). Medych. zhur.  
23 no.2:78-80 '53. (MLRA 8:2)  
(SERUM THERAPY)

NIKOLAYEV, D.D.; ISKRA, G.S.; MEL'NICHENKO, A.F.; MAKAREVICH, Yu.S.;  
STARIKOV, A.A.; FOMOVSKIY, V.A.

Mechanization of the operations in selecting and preparing coal  
samples from railroad cars in the Gorlovka Coke and Chemical Plant.  
Koks i khim. no. 2(6-10 '63. (MIRA 16:2)

1. Ukrinsugol' (for Nikolayev). 2. Gorlovskiy koksokhimicheskiy  
zavod (for Iskra, Mel'nichenko). 3. Dongiproglemash (for Markarevich,  
Starikov, Fomovskiy).  
(Gorlovka—Coke industry—Equipment and supplies)

ISKRA, J.

Printing films of polyvinyl chloride. p. 372. (PRZEMYSŁ CHEMICZNY, Vol. 10,  
No. 7, July 1954, Warszawa, Poland)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 3, No. 12, Dec.  
1954, Uncl.



STOJEW, St. [Stoyev, St.], doc.; HRANT, T. [Khrant', T.], inz.;  
BUCEW, H. [Butsev, N.], inz.; ISKRA, Jerzy, [translator]  
mgr. ins.

Electrodispersion method used in emulsification of coal  
flotation reagents. Przegl gorn 20 no.9:463-466 S '64.

ACC NR: AR6027472

SOURCE CODE: UR/0044/66/000/005/B103/B103

AUTHOR: Iskra, K. K.

TITLE: A scheme regarding the straight line method

SOURCE: Ref. zh. Matematika, Abs. 5B543

REF SOURCE: Sb. Tezisy dokl. Nauchn. sessii, posvyashch. 25-letiyu Grodzensk.  
ped. in-ta, 1965. Minsk, 1965, 107-110TOPIC TAGS: differential equations, second order differential equations, difference  
methodABSTRACT: The parabolic differential equation <sup>16</sup>

$$\frac{\partial u}{\partial t} = a(x) \frac{\partial^2 u}{\partial x^2} + b(x) \frac{\partial u}{\partial x} + c(x) u + f(x, t),$$

is studied in the region  $0 < x < 1$  with  $t \geq 0$ ,  $u(x, 0) = \phi(x)$  initial and  $u(0, t) = u(lt) = 0$  boundary conditions. The quotient of  $t$  in the above equation is substituted with a difference relationship of the form

$$\sum_{i=0}^{n-1} A_i u_{n-i}(x),$$

where the coefficients  $A_i$  have to satisfy certain conditions. The author establishes

UDC: 518:517.944/.947

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ACC NR: AR6027472

that conditions for rigidity of the obtained scheme depend on the roots of a characteristic equation. [Translation of abstract] Ya. Slikhashkin

SUB CODE: 12

Card 2/2

ISKRA K.K.

44-1-556

TRANSLATION FROM: Referativnyy Zhurnal, Matematika, 1957,  
Nr 1, p. 90 (USSR)

AUTHOR:

Iskra, K. K.

TITLE:

Some Theorems Concerning Series (Nekotoryye  
teoremy o ryadakh)

PERIODICAL:

Uch. zap. Grodzensk. gos. ped.in-ta, 1955,  
Nr 1, pp. 41-50

ABSTRACT: The author introduces the definition: two series  $\sum_{n=1}^{\infty} U_n$  and  $\sum_{n=1}^{\infty} V_n$  ( $U_n > 0, V_n > 0$ ) are called series with asymptotically identical terms, if there exist such constants

$A > 0$  and  $B > 0$  that  $A < \frac{U_n}{V_n} < B$ . The following theorem is proved:

when two series  $\sum_{n=1}^{\infty} U_n$  and  $\sum_{n=1}^{\infty} V_n$  possess asymptotically identical terms, then both of them are either convergent or

divergent. Definition: Two series  $\sum_{n=1}^{\infty} U_n$  and  $\sum_{n=1}^{\infty} V_n$  are called series with asymptotically identical terms in a restricted sense, if at the same time

$$\sum_{n=1}^{\infty} \left| \frac{U_n}{V_n} - \frac{U_{n+1}}{V_{n+1}} \right| < \infty \text{ and}$$

$$\sum_{n=1}^{\infty} \left| \frac{V_n}{U_n} - \frac{V_{n+1}}{U_{n+1}} \right| < \infty$$

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44-1-556

Some Theorems Concerning Series (Cont.)

Theorem: Two series with asymptotically identical terms in a restricted sense are either simultaneously convergent or simultaneously divergent. A demonstration is given of the application of the above theorems to the construction of the integral-convergence criterion of series with terms non-monotonically decreasing to zero.

I. V. Matveyev.

Card 2/2

GOLUCH, Antoni, mgr inz.; ISKRA, Ryszard, mgr inz.

Experiments with and tests of hydraulic valves. Przegl  
mech 22 no.5:138-141 10 Mr '63.

1. Bielskie Zaklady Urzadzen Technicznych, Bielsko-Biala.

PILAT, I.M.; ISKRA, V.D.; SHUMAN, V.B.

Electric properties of the intermetallic compounds CdSb with  
indium impurities. Fiz. tver. tela 1 no.3:393-396 Mr '59.  
(MIRA 12:5)

1.Chernevitskiy gosudarstvennyy universitet.  
(Cadmium antimonide--Electric properties)

24,7600 (1035,1043,1144)

S/181/60/002/011/024/042  
B006/B056

AUTHORS: Samoylovich, A. G. and Iskra, V. D.

TITLE: Effect of Crystal Anisotropy Upon Thermal Vibrations of Atoms in Ge and Si

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 11, pp. 2827-2833

TEXT: The present paper describes a theoretical study of the spectrum and polarization of acoustic phonons in germanium and silicon. It is shown that the anisotropic crystal of Ge or Si, which is characterized by the elastic moduli  $c_{11}$ ,  $c_{12}$ , and  $c_{44}$  ( $c^* = -c_{11} + c_{12} + 2c_{44} \neq 0$ ), may well be replaced by an elastic and isotropic crystal whose elastic moduli are described by the following equations:

$$c_{11}' = \frac{1}{3} \left\{ 2c_{44} + c_{11} + 2(c_{11} - c_{44}) \sqrt{1 + \frac{3c^*(c_{11} + c_{12})}{5(c_{11} - c_{44})^2}} \right\},$$

$$c_{44}' = \frac{1}{3} \left\{ 2c_{44} + c_{11} - (c_{11} - c_{44}) \sqrt{1 + \frac{3c^*(c_{11} + c_{12})}{5(c_{11} - c_{44})^2}} \right\}, \quad c^{*'} = 0.$$

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86437

Effect of Crystal Anisotropy Upon Thermal  
Vibrations of Atoms in Ge and Si

S/181/60/002/011/024/042  
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The constants have the following numerical values:

	$\alpha_{12}$	$\alpha_{44}$	$\alpha_{11}$	$\alpha$	$\alpha_{11}'$	$\alpha_{44}'$
Ge [10 <sup>12</sup> dyn/cm <sup>2</sup> ]	0.53	0.68	1.356	0.534	1.592	0.562
Si [10 <sup>12</sup> dyn/cm <sup>2</sup> ]	0.65	0.801	1.675	0.577	1.927	0.675

The spectrum of acoustic phonons is given as

$$\omega_1 = \sqrt{\frac{\alpha_{44}}{a} \left( k^2 + \frac{b}{3} + \frac{2b}{3} \sqrt{1 - 3 \frac{a}{b^2}} \right)}, \quad \omega_{2,3} = \sqrt{\frac{\alpha_{44}}{a} \left( k^2 + \frac{b}{3} - \frac{b}{3} \sqrt{1 - 3 \frac{a}{b^2}} \right)}.$$

$$\text{For Ge, } b = \frac{\alpha_{11} - \alpha_{44}}{\alpha_{44}} k^2 = 0.994 k^2 \text{ and } a = -\frac{\alpha_{11} + \alpha_{12}}{3} f = -2.178 f,$$

for Si,  $b = 1.091 k^2$  and  $a = -2.091 f$ . As  $\omega_1$  and  $\omega_2$  depend only little on the direction of the wave vector  $k$ , it is possible to average over the directions of  $k$  by putting  $f = 1/5$ . It can be shown that the polarizations of oscillations differ only little from those observed in an isotropic crystal. There are 4 figures, 2 tables, and 6 references: 2 Soviet and

Card 2/3

86437

Effect of Crystal Anisotropy Upon Thermal  
Vibrations of Atoms in Ge and Si

S/181/60/002/011/024/042  
B006/B056

4 US.

ASSOCIATION: Institut poluprovodnikov AN SSSR Leningrad  
(Institute of Semiconductors of the AS USSR, Leningrad)

SUBMITTED: July 10, 1960

✓

Card 3/3

247200 (1144, 1153, 1160)

29684  
S/181/61/003/010/006/036  
B102/B108

AUTHORS: Samoylovich, A. G., Korenblit, I. Ya., Dakhovskiy, I. V.,  
and Iskra, V. D.

TITLE: Solution of the kinetic equation for anisotropic electron  
scattering

PERIODICAL: Fizika tverdogo tela, v. 3, no. 10, 1961, 2939-2952

TEXT: Elastic electron scattering is studied theoretically under the  
following assumptions: The considered system is under the influence of  
an external electric field and a temperature gradient. The electron

energy spectrum is given by  $\varepsilon = \sum_{i=1}^3 \frac{\hbar^2 k_i^2}{2m_i}$ . Electric field and temperature  
gradient are weak, no magnetic field exists. The kinetic equation is  
given as

$$Dn_k^{(0)} + Rn_k' = 0. \quad (1.2)$$

$$Rn_k' = \sum_l W_{kk'} (n_{k'} - n_k'), \quad (1.3).$$

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3/181/61/003/010/006/036  
B102/B108

Solution of the kinetic equation...

$n_k^{(0)}$  denotes the equilibrium distribution function,  $\hat{n}_k$  the nonequilibrium correction to it,  $\hat{Dn}_k^{(0)}$  the free term

$$\hat{Dn}_k^{(0)} = \frac{1}{\hbar} \frac{\partial n_k^{(0)}}{\partial \epsilon} \left[ \sum_i \frac{\partial \mu}{\partial x_i} \frac{\partial n}{\partial k_i} + \frac{\epsilon - \mu}{T} \sum_i \frac{\partial T}{\partial x_i} \frac{\partial n}{\partial k_i} - e \sum_i \frac{\partial e}{\partial k_i} \delta_i \right], \quad (1.4)$$

of the kinetic equation,  $\mu$  the chemical potential,  $\epsilon$  the external electric field,  $R$  the collision operator:  $\hat{Rn}_k^{(1)} = \sum_{ij} \gamma_i(\epsilon) v_{ij} k_j$ , with

$$n_k^{(1)} = \sum_i \gamma_i(\epsilon) k_i \quad (1.5) \text{ and}$$

$$\sum_i W_{kk'}(k'_i - k_i) = \sum_j v_{ij}(s) k_j; \quad (1.7)$$

Since (1.5) and (1.7) are not valid in every case, the authors tried to establish a method which makes it possible to find out in which cases (1.5) and (1.7) hold true and to solve the kinetic equation also when the aforementioned conditions are not valid. First, "deformed" coordinates are introduced in the quasimomentum space and the free term

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S/181/61/003/010/006/036  
B102/B108

Solution of the kinetic equation...

(1.4) is transformed into  $\hat{D}n_k^{(0)} = \sum_m D_m Y_{1m}(\theta_0 \varphi_0)$  so that the kinetic equation goes over into an infinite system of linear algebraic equations. The solution has to be sought as an expansion into spherical harmonics

$n_k = \sum_{km} X_{km}(\epsilon) \cdot Y_{km}(\theta_0 \varphi_0)$ . The collision operator is then given by

$$\hat{R}n_k = - \sum_{jkmp} X_{km}(\epsilon) B_{jk}(mp) Y_{jp}(\theta_0 \varphi_0), \quad (2,8)$$

$$-\sum_{jk} B_{jk}(mp) Y_{jp}(\theta_0 \varphi_0) = \hat{R}Y_{km}(\theta_0 \varphi_0). \quad (2,9)$$

and  $\sum_{km} B_{jk}(pm) X_{km} = D_p \delta_{j1}$ , or, for  $B_{jk}(pm) = B_{jk}(m) \delta_{mp}$ ,  $\sum_k B_{jk}(m) X_{km} = D_m \delta_{j1}$ . (2.11). The coefficients  $B_{jk}(pm)$  are found to be

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B102/B108

Solution of the kinetic equation...

$$B_{jk}(pm) = \frac{4\sqrt{2m_1 m_2 m^2}}{(2\pi\hbar)^2} r^{m-p} \sum_{l,m,n} \sqrt{\frac{(j+1)(k+l+1)(-s)(k-s)}{(l+s)(k+s)}} \times \\ \times \int d\Omega \int_0^{\pi/2} d\theta \sin\theta \cos\theta P_l^s(\cos\theta) P_k^s(\cos\theta) P_l^s(\cos\theta) \times \quad (3.33)$$

$\times P_m^s(\cos\theta) e^{im-pn};$

$d\Omega = \sin\theta d\theta d\varphi.$   
where  $j$  and  $k$  are odd numbers. An iteration method is employed for the determination of  $X_{1m}$  in the system (2.11). The quickly converging series

$$X_{1m} = D_m \sum_l \frac{Z_{l-1}^2}{\delta_l(m) \delta_{l-1}(m)}, \quad (4.6)$$

$$Z_{l-1}(m) = \begin{vmatrix} B_{31}(m) & B_{33}(m) & \dots & B_{3, n-3}(m) \\ \vdots & \vdots & \ddots & \vdots \\ B_{2l-1, 1}(m) & B_{2l-1, 3}(m) & \dots & B_{2l-1, n-3}(m) \end{vmatrix}; Z_0 = 1. \quad (4.7)$$

is derived. The authors have used this method before to investigate electron scattering from impurity ions and acoustic phonons (results published elsewhere). Finally, a method of solving the kinetic equation,

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29684  
S/181/61/003/010/006/036  
B102/B108

Solution of the kinetic equation...

which is based on the use of eigenfunctions of R is discussed in brief.  
There are 12 references: 9 Soviet and 3 non-Soviet. The reference to the  
English-language publication reads as follows: J. M. Ziman, Canad.  
Journ. Phys., 34, 1256, 1956.

ASSOCIATION: Institut poluprovodnikov AN SSSR Leningrad (Institute of  
Semiconductors AS USSR, Leningrad)

SUBMITTED: March 31, 1961

X  
Card 5/5

24.7200 (1144,1153,1160)

30774  
S/181/61/003/011/006/056  
B102/B138

AUTHORS: Samoylovich, A. G., Korenblit, I. Ya., Dakhovskiy, I. V.,  
and Iskra, V. D.

TITLE: Anisotropic scattering of electrons from ionized impurities  
and acoustic phonons

PERIODICAL: Fizika tverdogo tela, v. 3, no. 11, 1961, 3285-3298

TEXT: In continuation of two previous papers (Ref. 1: FTT, 2, 10, 1961  
and Ref. 2: DAN SSSR, 139, 355, 1961) the authors theoretically investigated  
inelastic electron scattering from impurity ions and acoustic phonons in  
cubic crystals. First the probability of scattering from impurity ions in  
a cubic crystal with isotropic dielectric constant is calculated in Born's  
approximation:

$$W(\theta\phi\rho) = \frac{2\pi}{\hbar} N |V_{kk'}|^2 = \frac{\pi^2 e_0^4 N \hbar^2}{2e^2 m_3^2 \epsilon^2 \left[ \left( \cos^2 \theta + \frac{m_1}{m_3} \sin^2 \theta \right) \cos^2 \phi + \gamma^2 \right]^2}. \quad (1.6)$$

$\epsilon$  is the dielectric constant,  $\rho = \hbar^2 / 8\pi^2 m_3 \epsilon$ ,  $a$  - shielding radius,

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S/181/61/003/011/006/056  
B102/B138

Anisotropic scattering of electrons ...

$N$  - number of impurity ions per  $\text{cm}^3$ ,  $V_{kk}^{(m)}$  - transition matrix element

[Abstracter's note: Denotations and basic equations are taken from Ref. 1. It is impossible to follow the calculations if Ref. 1 is not available. In the next section the coefficients  $B_{jk}^{(m)}$  and the first terms of the  $X_{1m}$  series are determined approximately. The following results were obtained:

$$B_{jk}(0) = \frac{\pi C}{4} \ln \frac{1}{\gamma^2} \frac{m_e^2}{m_{jk}^{(m)}} \sqrt{(2j+1)(2k+1)} \times \\ \times \sum_{s=0}^{\infty} \frac{(j+s)!!(k+s)!!(j-s)!!(k-s)!!}{(k+s-1)!!(j+s-1)!!(k-s-1)!!(j-s-1)!!} \quad (2.8)$$

with

$$C = \frac{\pi N e_0^4 m_1}{\sqrt{2} \pi^2 m_j m_k} \quad (2.2)$$

The approximate value  $B_{jk}(0) \approx B_{jk}(0)$ .

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S/181/61/003/011/006/056

Anisotropic scattering of electrons ... B102/B136

$$X_{10} = \frac{D_0}{B_{11}(0)} (1 + 0.72 + 0.015 + 0.00018 + \dots). \quad (2.9),$$

$$X_{11} = \frac{D_1}{B_{11}(1)} (1 + 0.72 + 0.015 + \dots). \quad (2.12)$$

The third section deals with the relaxation time tensor for scattering from impurity ions. Relaxation time is assumed to be isotropic:

$$\tau^{-1} = \frac{N\pi e_0^4}{\pi^2 \sqrt{2m_e} g_3} \left( \ln \frac{1 + \gamma^2}{\gamma^2} - \frac{1}{1 + \gamma^2} \right). \quad (3.9).$$

The non-vanishing components of the  $\tau$ -tensor are given by

$$\left. \begin{aligned} \tau_{33} &= \chi_0 = \frac{1}{B_{11}(0)} (1 + g_0), \\ \tau_{11} &= \tau_{22} = \chi_1 = \frac{1}{B_{11}(1)} (1 + g_1). \end{aligned} \right\} \quad (3.7) \quad \checkmark$$

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S/181/61/003/011/006/056

Anisotropic scattering of electrons ... B102/B158

with

$$X_{1m} = D_m \chi_m,$$

$$\chi_m = \frac{1}{B_{11}(m)} \left[ 1 + \frac{B_{13}^2(m)}{B_{11}(m)B_{33}(m) - B_{13}^2(m)} \right], \quad (3.1)$$

$$(3.2).$$

$$B_{11}(0) = \frac{3\pi Ne_0^4 \sqrt{2m_3}}{8\epsilon^3 e^2 m_1 \beta^3} \left\{ 2 \left( \operatorname{arc tg} \beta - \frac{\beta}{1+\beta^2} \right) \ln \frac{1}{\gamma^2} - 2 \operatorname{arc tg} \beta \ln(1+\beta^2) + \right. \\ \left. + 4L(\operatorname{arc tg} \beta) + (1+\beta^2) \left[ \operatorname{arc tg} \beta + \frac{\beta(\beta^2-1)}{(1+\beta^2)^2} \right] \gamma^2 \right\}, \quad (3.10)$$

$$B_{11}(1) = \frac{3\pi Ne_0^4 \sqrt{2m_3}}{8\epsilon^3 e^2 m_1 \beta^3} \left\{ [(\beta^2-1) \operatorname{arc tg} \beta + \beta] \ln \frac{1}{\gamma^2} - \right. \\ \left. - 2\beta^2 \operatorname{arc tg} \beta - (\beta^2-1) \operatorname{arc tg} \beta \ln(1+\beta^2) + 2(\beta^2-1)L(\operatorname{arc tg} \beta) + \right. \\ \left. + \frac{1+\beta^2}{2} \left[ (3\beta^2-1) \operatorname{arc tg} \beta + \frac{\beta(3\beta^2+1)}{1+\beta^2} \right] \gamma^2 \right\}; \quad (3.11)$$

with the Lobachevskiy function  $L(t) = - \int_0^t \ln \cos x dx$ . As has already been shown in Ref. 1, all fluxes can be expressed by the relaxation

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B102/B138

Anisotropic scattering of electrons ...

time tensor. Its components depend only on energy. In section 4 the probability electron of scattering from acoustic phonons is determined by means of the deformation potential.

$$W(\theta\psi) = \frac{\pi kT}{2\rho Vh} \sum_i \frac{1}{\Omega_a^2(\theta\psi)} \left[ \sum_{ii} D_{ii} (\eta_i e_i^a + \eta_i e_i^a)^2 \right], \quad (4.7)$$

$$\eta_1 = \sqrt{m_1} \sin \theta \cos \varphi, \quad \eta_2 = \sqrt{m_2} \sin \theta \sin \varphi, \quad \eta_3 = \sqrt{m_3} \cos \theta. \quad (4.8)$$

is found, where  $D_{11}$  is the tensor of the deformation potential constants,  $e^a$  the polarization vector,  $\rho$  the crystal density,  $V$  its volume,  $\Omega_a(\theta\psi)$  is a certain function of the angles  $\theta$  and  $\psi$ . In section 5 the properties of the coefficients

$$B_{jk}(pm) = \frac{4\sqrt{2m_1 m_2 m_3}}{(2\pi h)^3} i^{n-p} \sum_{\text{per}} L_{jk}^p \mathcal{L}_{jk}^p(pm), \quad (5.1)$$

with

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Anisotropic scattering of electrons ...

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S/181/61/003/011/006/056  
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$$\mathcal{L}_{jk}^s = 2 \sqrt{\frac{(j-s)! (k-s)!}{(j+s)! (k+s)!}} \int_0^{\pi} d\theta \sin \theta \cos \theta \hat{P}_j^s(\cos \theta) P_k^s(\cos \theta), \quad (5.2)$$

$$\mathcal{R}_{jk}^s(pm) = \int d\Omega \hat{P}_{js}^s(\cos \theta) \hat{P}_{ks}^s(\cos \theta) e^{i(m-p)\varphi}, \quad (5.3)$$

are investigated. The  $\mathcal{L}_{jk}^{(0)}$  and  $\mathcal{L}_{jk}^{(2)}$  are tabulated for some  $j$  and  $k$  values. In the last section the relaxation time tensor is calculated for electron scattering from acoustic phonons in Ge, Si and  $\text{Bi}_2\text{Te}_3$ . For  $k = j = 1$  and  $W(\nu, \pi, \rho) = W(\nu, \pi + \rho)$  the general formulas are given:

$$\begin{cases} B_{11}(00) X_{10} = D_0, \\ B_{11}(11) X_{11} + B_{11}(1, -1) X_{1, -1} = D_1, \\ B_{11}(-1, 1) X_{11} + B_{11}(-1, -1) X_{1, -1} = D_2. \end{cases} \quad (6.1)$$

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B102/B138

Anisotropic scattering of electrons ...

$$n'_k = n_k' = \frac{D_0 Y_{10}(\theta_0 \varphi_0) + \frac{D_{-1} B_{11}(11) - D_1 B_{11}^*(1, -1)}{B_{11}^*(11) - |B_{11}(1, -1)|^2} Y_{1,-1}(\theta_0 \varphi_0) +}{\frac{D_1 B_{11}(11) - D_{-1} B_{11}^*(1, -1)}{B_{11}^*(11) - |B_{11}(1, -1)|^2} Y_{11}(\theta_0 \varphi_0)} \quad (6.2)$$

$$B_{11}(1, -1) = |B_{11}(1, -1)| e^{i\psi} \quad (6.3)$$

$$\left. \begin{aligned} \tau_{11} &= \frac{B_{11}(11) - |B_{11}(1, -1)| \cos \psi}{B_{11}^*(11) - |B_{11}(1, -1)|^2}; & \tau_{22} &= \frac{B_{11}(11) + |B_{11}(1, -1)| \cos \psi}{B_{11}^*(11) - |B_{11}(1, -1)|^2}; \\ \tau_{33} &= \frac{1}{B_{11}(00)}; & \tau_{12} &= \sqrt{\frac{m_1}{m_2}} \frac{|B_{11}(1, -1)| \sin \psi}{B_{11}^*(11) - |B_{11}(1, -1)|^2}; \\ \tau_{31} &= \frac{m_2}{m_1} \tau_{12}. \end{aligned} \right\} \quad (6.4)$$

Then they are applied first to Ge and Si, then to  $\text{Bi}_2\text{Te}_3$ . There are 5 figures, 5 tables, and 14 references: 9 Soviet and 5 non-Soviet. The three references to English-language publications read as follows:  
 R. B. Dingle, Phil. Mag., 46, 831, 1955; F. Ham. Phys. Rev. 100, 1251,  
 Card 7/8

30774

S/181/61/003/011/006/056

B102/B138

Anisotropic scattering of electrons ...

1955; J. R. Drabble a. R. Wolfe. Proc. Phys. Soc. B69, 1101, 1956.

ASSOCIATION: Institut poluprovodnikov AN SSSR Leningrad (Institute of  
Semiconductors AS USSR, Leningrad) X

SUBMITTED: May 9, 1961

Card 8/8

ISKRA, V.D.

Electroacoustic effect in n-Ge and n-Si. Fiz. tver tela 5 no.9;  
2663-2673 S '63. (MIRA 16:10)

1. Chernovitskiy gosudarstvennyy universitet.

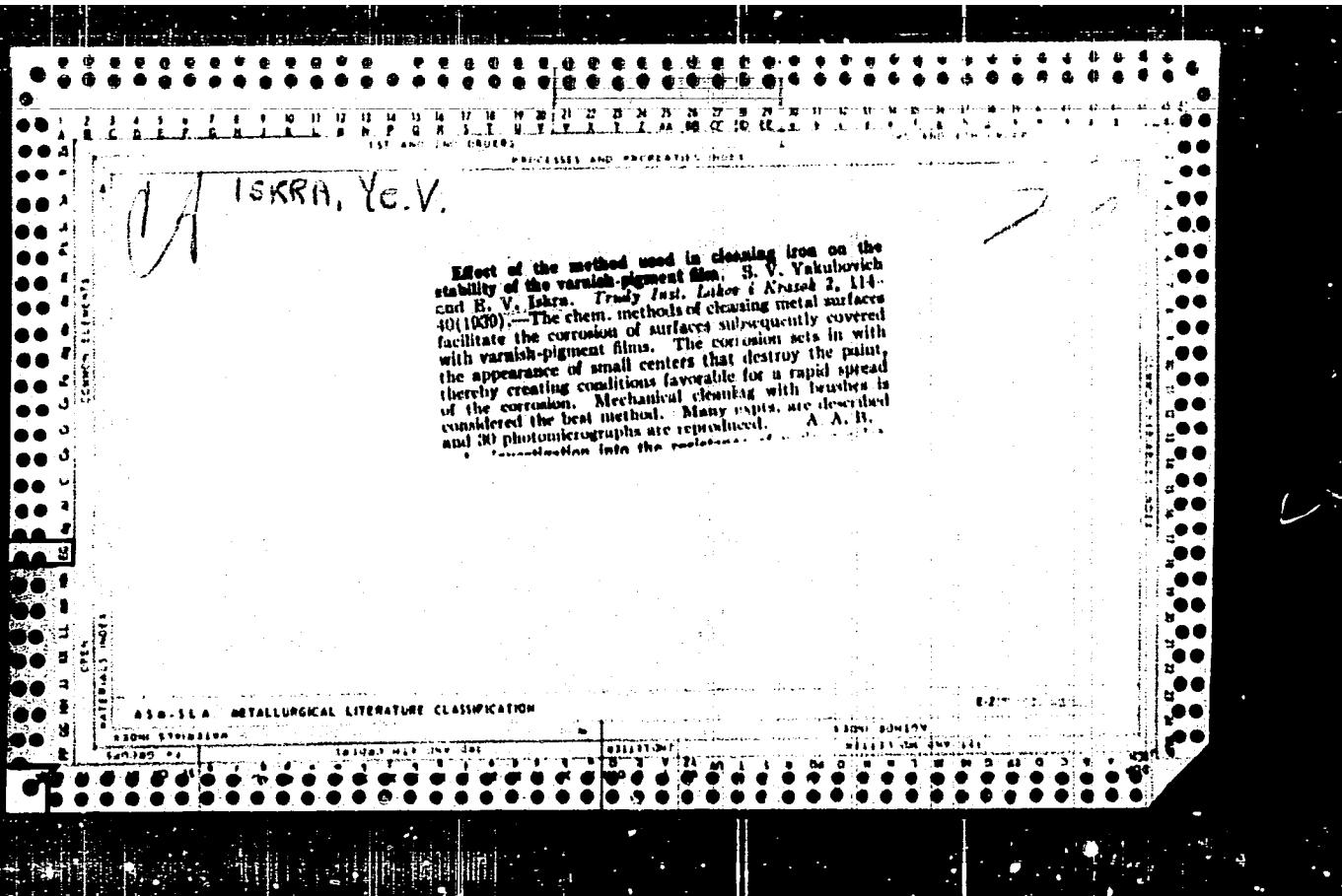
ISKRA, Viktor Maksimovich; LARICHEV, V.I., red.; SHADRINA, N.D., tekhn.red.

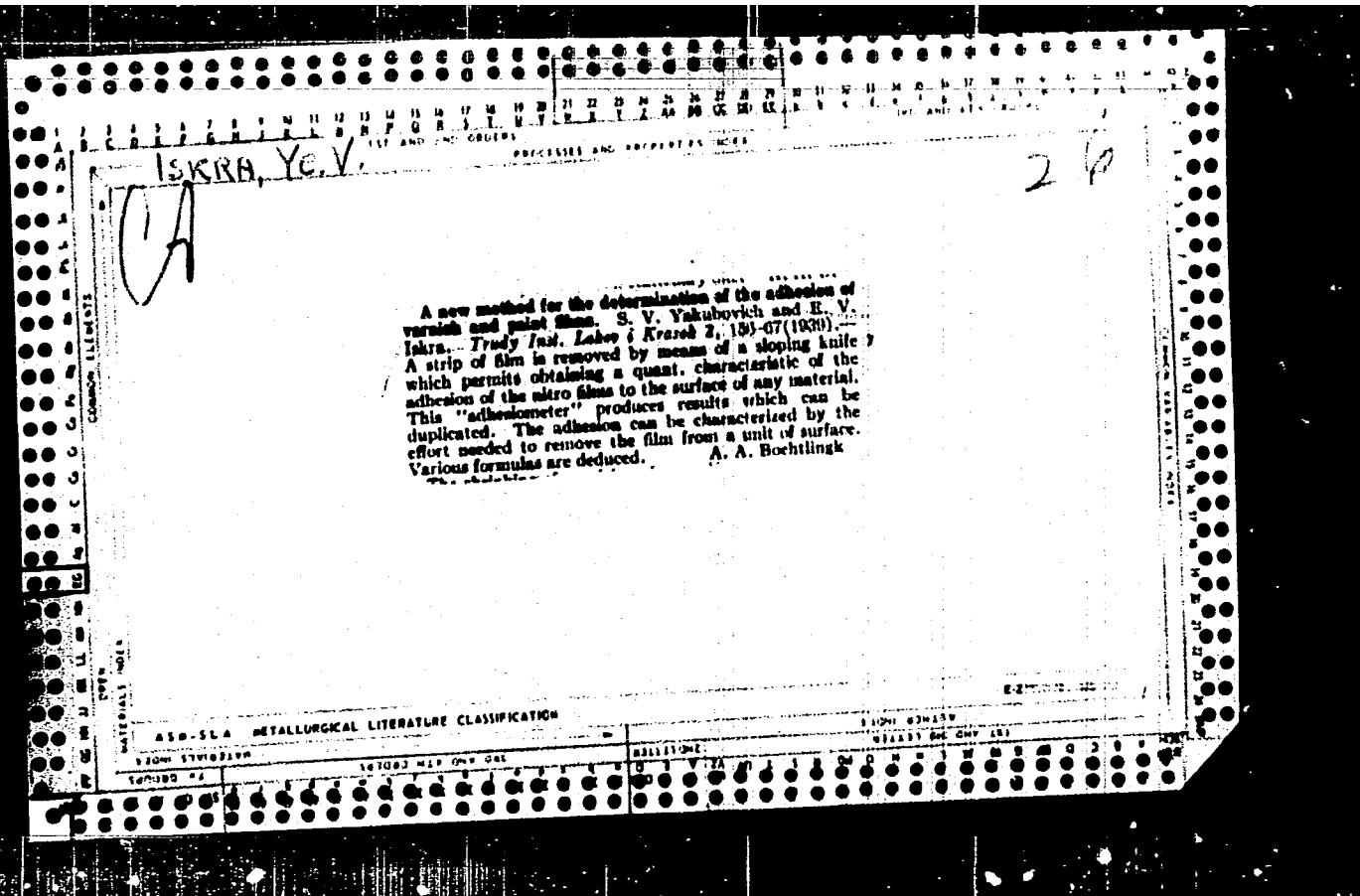
[Automation--abundance or new calamities?] Avtomatizatsiya - izobilie ili novye bedstviia? Moskva, Izd-vo VTsSPS Profizdat, 1959.  
117 p. (MIRA 13:?)

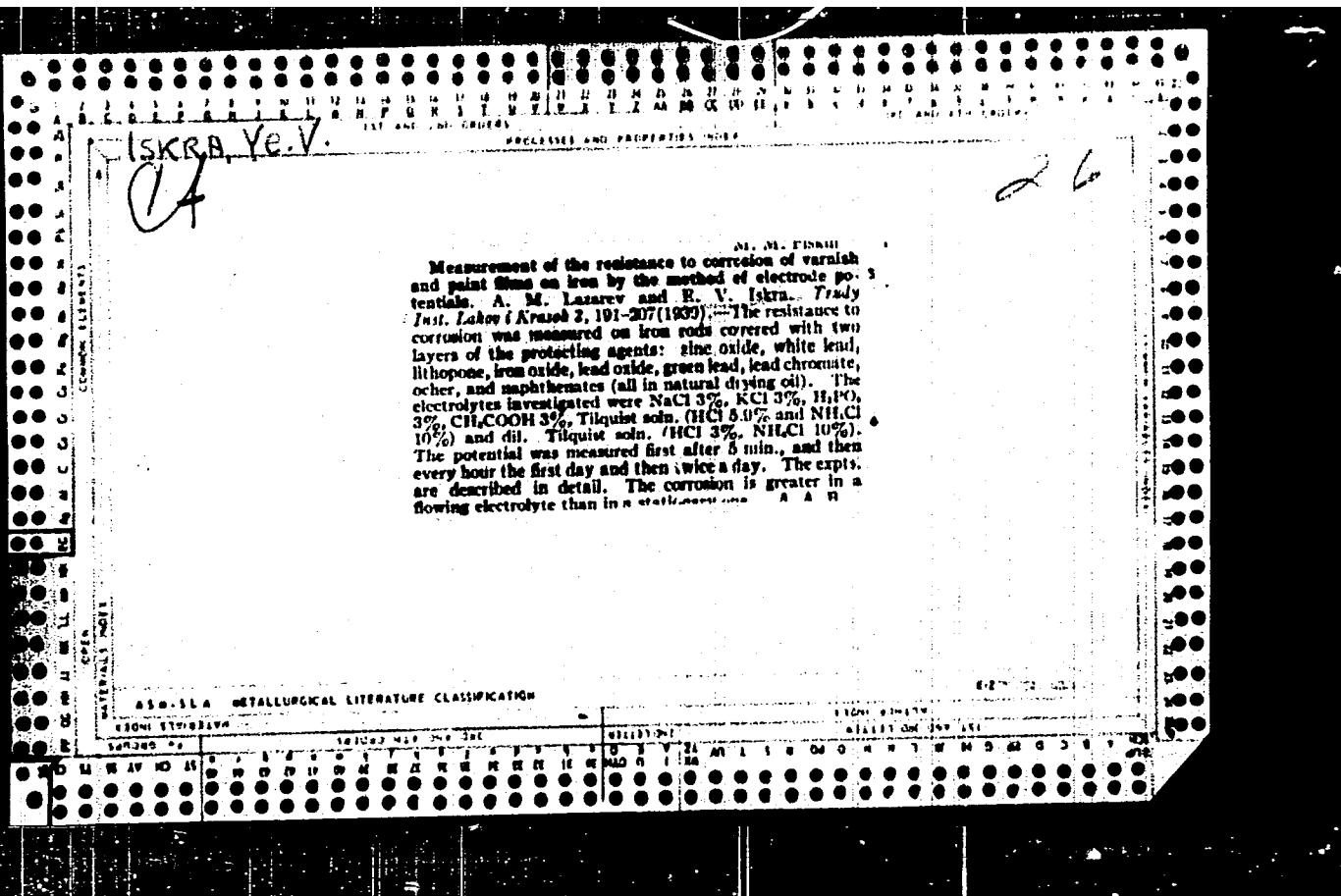
(Automation)

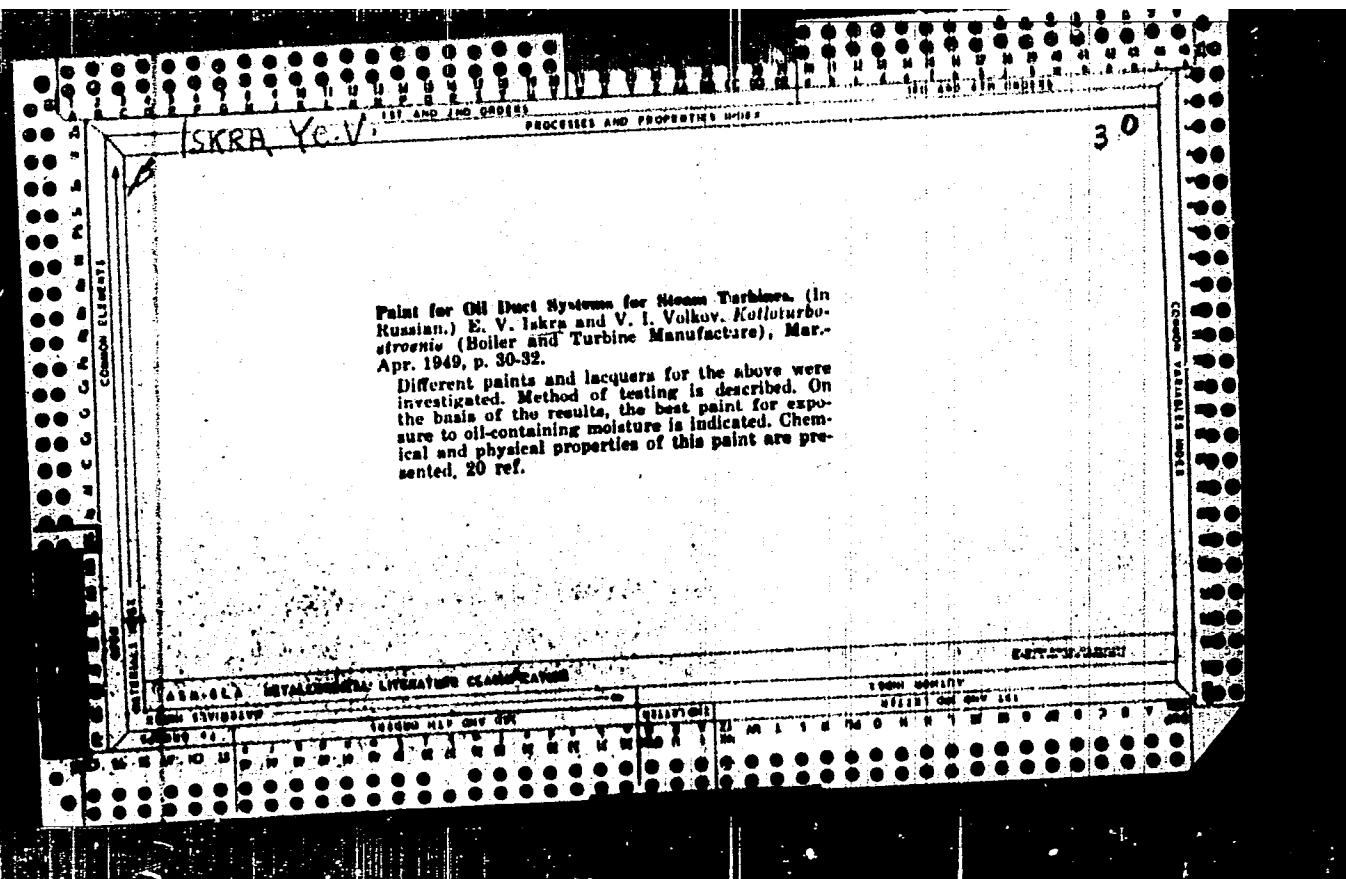
ISKRA, V.M.; SIDEL'NIKOV, I.I.

[The village is studying] Selo uchitsia. Moskva, Sovetskaya  
Rossiya, 1962. 78 p. (MIRA 16:1)  
(Agriculture—Study and teaching)









ISKRA, Ye.V., zaveduyushchiy laboratoriye.

Improving the design of viscosimeters. Standartizatsiya no.5:  
72-73 S-0'54.  
(Viscosimeter)

ISKRA, Ye.V., inzhener.

Improving the quality of coal-tar lacquers. Standartizatsiya  
no.1:62-63 Ja-Fe '56. (MLRA 9:2)  
(Coal-tar products) (Lacquer and lacquering--Standards)

ISKRA, Ye.V., kandidat tekhnicheskikh nauk.

Economizing red lead. Sudostreeneie 22 no.1:22-25 Ja '56.  
(Ships--Painting) (Red lead) (MILRA 9:?)

ISKRA, Ye.V., kandidat tekhnicheskikh nauk.

Adhesives for insulating materials. Sudostroenie 22 no.8:  
22-25 Ag '56. (MLRA 9:10)

(Adhesives) (Insulating materials)

Iskra, Ye. V.

USSR/ Chemistry - Paints

Card 1/1 Pub. 128 - 26/33

Authors : Iskra, Ye. V.

Title : Oil-resistant paints

Periodical : Vest. mash. 36/1, 71-75, Jan 1956

Abstract : Tests were conducted on various type of paints used for coating of turbine components to determine their rate and drying ability at normal and increased temperatures, color and clearness, their stability and ease of cleaning with various agents (kerosene, alcohol, etc.) and their resistance to the action of oils. Results of the above mentioned tests, as well as technical specifications regarding types of paints and oils used, are given. Three USSR references (1939-1948). Tables.

Institution : .....

Submitted : .....

ISKRA, Ye. V.

137-58-3-5695

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 3, p 172 (USSR)

AUTHORS: Bogorad, I. Ya., Iskra, Ye. V.

TITLE: Protection of Metals Against Corrosion and Finishing Coatings  
(Zashchita metallov ot korrozii i otdelochnyye pokrytiya)

PERIODICAL: Sb. inform. stately dlya sudostroiteley. Leningrad,  
Sudpromgiz, 1957, pp 199-230

ABSTRACT: The following novel lacquer-paint materials are described:  
a) undercoatings: 329-V, 329-D, ALG-12, AG-3a, KhSG-7,  
ASB-1, UBG-1; b) benzine and water-resistant enamels, as well  
as enamels of epoxy-citrocellulose and perchlorovinyl types;  
c) heat-resistant organic silicon and polyurethan lacquers, etc.  
Fields of employment and technological peculiarities of  
application of the materials listed above are described together  
with detergent compounds of the OP-7 and OL-10 types. The  
authors also report on a method employing an endless abrasive  
band for polishing purposes, a system of wear-resistant anodic  
oxidation of Al, a method of anodizing with subsequent painting  
under Au, a phosphate-oxide method for the treatment of Al,  
and on novel Ge rectifiers with liquid cooling. Also described

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137-58-3-5095

**Protection of Metals Against Corrosion . . . (cont.)**

is a magnetic apparatus for the determination of the thickness of coatings and a device operating on a principle involving determination of intensity of  $\beta$  radiation, as well as a number of devices employed in automatic regulation and control of processes of electrodeposition of metals. The authors include a brief report on methods of corrosion prevention in nuclear reactors and in reservoirs. An electrical dust counter of FPG-6 type controlling the degree of dust pollution of air is described.

N. K.

Card 2/2

AUTHOR: Iskra, E.V. (TsNII MSP).

166

TITLE: Modified coal pitch lacquers. (Modifitsirovannyye kamennougol'nyye laki).

PERIODICAL: "Koks i Khimiya" (Coke and Chemistry), 1957, No.3,  
pp.47-49 (U.S.S.R.)

ABSTRACT: Painting and anticorrosive properties of modern pitch lacquers can be considerably improved by some additives. As an additive the use of 50% ethrinal lacquer or lacquer VKhL is recommended. There is one table.

1. Isentral'nyy nauchno-issledovatel'nyy inst. ministerstva  
sudostroitel'stva i promyshlennosti.  
(varnish and varnishing) (coal-tar products)

ISKRA, Ye.V.

Roller brush painting. Rech. transp. 16 no. 5:39-40 My '57.  
(MLRA 10:5)  
(Ships--Painting)

~~ISKRA, Ye.V., kand.tekhn.nauk.~~

Ship painting with emulsion paints. Sudostroenie 23 no.12:43-45  
(MIRA 11:2)  
D '57.  
(Ships--Painting) (Emulsions)

ISKRA, Ye. ✓

Painting seagoing ships with ethynol paints. Mor. flot 18 no.5:12-13  
My '58. (MIRA 11:6)

1. Nachall'nik laboratorii Vsesoyuznogo tsentral'nogo nauchno-  
issledovatel'skogo instituta sudostroitel'noy promyshlennosti.  
(Ships--Painting)

ISKRA, Ye. V., kand.tekhn.nauk

~~Causes of premature fouling of ship bottoms. Sudostroenie 24~~  
no.5:41-43 My '58.  
(Fouling of ship bottoms)

ISKRA, Ye.V., kand.tekhn.nauk

Methods of removing old paint. Sudostroenie 25 no.2:52-53 F '59.  
(MIRA 12:4)

(Ships--Maintenance and repair)  
(Paint removers)

PHASE I BOOK EXPLOITATION

SOV/4978

Iskra, Yevgeniy Vasil'yevich

Etinolevyye kraski; primeneniye v sudostroyenii i drugikh  
otraslyakh promyshlennosti (Acetylene Dyes; Their Appli-  
cation in Shipbuilding and Other Branches of Industry)  
Leningrad, Sudpromgiz, 1960. 178 p. 6,400 copies printed.

Scientific Ed.: B. P. Favorov; Ed.: T. A. Kliorina; Tech.  
Ed.: Yu. N. Korovenko.

PURPOSE: This book is intended for technical personnel in  
shipbuilding and repair yards; it may also be used by  
design and planning organizations.

COVERAGE: The book contains detailed data on synthetic vinyl  
paints. It describes the technology for the manufacture  
of paints, fillers, mastics, and corrosion-resisting sub-  
stances based on vinyl lacquers. It covers modified vinyl  
coatings, their properties, and technology of manufacture.  
The use of vinyl coatings in industry and agriculture is

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**Acetylene Dyes (Cont.)**

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discussed and specific fields of application are listed in the appendix. No personalities are mentioned. There are 22 references, all Soviet.

**TABLE OF CONTENTS:**

Foreword by the Scientific Editor [B. Favorov]	3
Ch. I. Divinyl Acetylene and Its Use as a Base for Film-Forming Components	5
Ch. II. Technology for the Manufacture of Paints, Fillers, Mastics, and Corrosion-Resisting Substances Based on Vinyl [Ethanol] Lacquer	14
Ch. III. Modified Vinyl Coatings and Technology of Manufacture	32
Ch. IV. Properties of Vinyl Coatings and Quality Control	44

Card 2/3

ISKRA, Ye.V., kand.tekhn.nauk

Safety measures for painting operations in shipbuilding. Sudostroenie  
29 no.10:53-56 0'60. (MIRA 13:10)  
(Ships--Painting) (Shipbuilding--Safety measures)

ISKRA, Ye.V., kand.tekhn.nauk

Methods of protecting ship mechanisms. Trudy MTO sud.prom.  
32:49-55 '60. (MIRA 13:6)  
(Marine engineering) (Corrosion and anticorrosives)

S/191/60/000/009/003/010  
B013/B055

AUTHORS: Iskra, Ye. V., Shtaykhman, G. A., Li, P. Z., Mikhaylova, Z.V.,  
Sedov, L. N., Al'shits, I. M., Kats, L. F., Papysheva, Ye.V.,  
Eksanov, V. A.

TITLE: Glass Fiber Laminates. 12. Dyeing of Polyester Glass-reinforced Plastics

PERIODICAL: Plasticheskiye massy, 1960, No. 9, pp. 11 - 15

TEXT: The present work deals with the dyeing of glass-reinforced polyester plastics and the dyes used for this purpose. The investigation showed that polyester resins may be colored satisfactorily with azo-, anthraquinone-, and triphenyl-methane dyes, phthalocyanine pigments, and others. The results obtained with several vat dyes and direct dyes were unsatisfactory. Inorganic pigments and dyes gave less brilliant hues than organic colorants. The results of the investigation showed that most dyes retard the gelling process. This retardation, however, is comparatively insignificant so that the properties of the hardened resin are hardly affected. To obtain well-colored products, the resin is generally applied

Card 1/2

Glass Fiber Laminates. 12. Dyeing of Poly-  
ester Glass-reinforced Plastics

S/191/60/000/009/003/010  
B013/B055

in two thin layers, a coat thickness of 0.4 - 0.7 mm being advisable. In practical use, structural glass-reinforced plastics are often exposed to sunlight. This necessitates the use of specially light-fast dyes. The color stability of samples was tested both in the laboratory under a ПРК-4 (PRK-4) quartz lamp and in open air, on roofs in Leningrad and Moscow. The following facts were established: 1) Polyester resins turn yellowish under sunlight. This is particularly noticeable with the lighter shades. 2) Inorganic pigments are the most light-fast. Direct introduction of the dye or pigment is the most expedient way of dyeing, but cannot be repeated. It is often the case, however, that the color of some structural part dyed in this manner must be renewed owing to damage or fading. This can only be done by applying enamel or oil paint. Some recipes for decorative units are given. According to destination, structural glass-reinforced plastics may be exposed to salt water, petroleum products, mineral oils, alkaline, and acid media. The coloring of plastics was stable for 4500 h in sea water, 3 h in boiling water, 3000 h in mineral oil, 24 h in 10%  $H_2SO_4$ , and 24 h in 2% NaOH. There are 5 tables and 5 non-Soviet references.

Card 2/2

ISKRA, Yevgeniy Vasil'yevich, kand. tekhn.nauk; AKATOVA, N.V., inzh.,  
red.; GRIGOR'YEVA, I.S., red.izd-va; BELOGUROVA, I.A., tekhn.  
red.

[Painting of nonferrous metals] Okraska tsvetnykh metallov.  
Leningrad, 1961. 12 p. (Leningradskii dom nauchno-tekhnicheskoi  
propagandy. Obmen peredovym opyтом. Seria: Zashchitnye pokrytiia,  
no.12) (MIRA 15:6)

(Nonferrous metals—Painting)  
(Protective coatings)

ISKRA, Ye.V.

Coal-tar colors for ships. Koks i khim. no.7:53-54 J1 '61.  
(MIRA 14:9)

(Ships--Painting)

L 11285-63 EWP(j)/ENT(m)/BDS—AFFTC/ASD—Pc-4—RM

ACCESSION NR: AT3001261

S/2915/62/013/000/0003/0006

58

AUTHOR: Iskra, Ye. V.

TITLE: Modern methods for combatting fouling

SOURCE: AN SSSR. Okeanograficheskaya komissiya. Trudy, v. 13, 1962. Zashchita ot morskogo obrastaniya, 3-6

TOPIC TAGS: marine antifouling coating

ABSTRACT: Various organic compounds, particularly derivatives of benzoic, dichloroacetic, and trichloroacetic acids, have been tested and used recently in the USSR as antifouling coatings for ship bottoms. Other materials used with varying degrees of success include 1) TPK, a thermoplastic coating from which toxic copper, zinc, and organic compounds are leached (effective for 25—40 months); 2) TKhN, a cold plastic coating from which toxic copper arsenic, zinc, and linoleates are leached (effective for 15—24 months); and 3) a cathode scale layer which can be removed, along with the fouling matter, by changing its polarity (effective for 8—12 months).

Card 1/2

ISKRA, Yevgeniy Vasil'yevich; PETRENKO, L.T., inzh., retsenzent;  
KUTSEVALOVA, Ye.P., nauchn. red.; SOSIPATROV, O.A., red.;  
SHISHKOVA, L.M., tekhn. red.

[Safety measures during painting operations in shipbuilding]  
Tekhnika bezopasnosti pri maliarnykh rabotakh v sudostroenii.  
Leningrad, Sudpromgiz, 1963. 86 p. (MIRA 16:9)  
(Ships--Painting)  
(Shipbuilding--Safety measures)

ISKRA, Yevgeniy Vasil'yevich, kand. tekhn. nauk; GUREVICH, Yefim  
Samoylovich, kand. tekhn. nauk; REYEMAN, A.I., red.;  
FREGER, D.P., red.izd-va; GVIERTS, V.L., tekhn. red.

[Modern ship paints; a review] Sovremennye sudovye kraski;  
obzor. Leningrad. Pts.1-2. 1963. (MIRA 16:9)  
(Ship--Painting) (Paint materials)

ISKRA, Ye.V.

Use of paint and lacquer coatings for the protection of hydraulic structures against fouling. Lakokras.mat. i ikh prim. no.2:37-39  
'63. (MIRA 16:4)

(Marine fouling)

(Protective coatings)

ISKRA, Ye.V.; TURPAYEVA, Ye.P.; SOLDATOVA, I.N.; SIMKINA, R.G.

Effect of some poisonous substances on the major fouling  
organisms in Taganrog Bay. Trudy Inst. okean. 70:259-269 '63.  
(MIRA 17:7)

ISKRA, Yevgeniy Vasil'yevich; KUTSEVALOVA, Yelizaveta Pavlovna;  
FAVOROV, Boris Pavlovich; MOSKALEV, A.T., inzh.,  
retsenzent; GRACHEV, N.D., inzh., retsenzent; KONONOV,  
M.D., inzh., retsenzent; ASHONEVITTS, G.Yu., nauchn. red. ;  
NIKITINA, M.I., red.

[Painting operations in shipbuilding] Maliarnye raboty v  
sudostroenii. Leningrad, Sudostroenie, 1965. 237 p.  
(MIRA 18:5)

L 55135-55 EAT(m)/EPP(c)/EWF(i)/EWP(b)/EWP(t) IJP(c) JD/WB  
ACCESSION NR: AF5021619 UR/0286/65/000/013/0098/0098

AUTHORS: Iskra, Ye. V. i. Sokolov, G. M.

TITLE: A method for passivating purified steel, Class 18, No. L72587

SOURCE: Byull. Izobretenij i tovarnych znakov, no. 13, 1965, 96

TOPIC TAGS: steel, passivator additive, titanium compound/ SKS-65 GP(i) latex,  
aubiral, mazhef salt

ABSTRACT: This Author Certificate presents a method for passivating purified steel by introducing aqueous solutions of titanium onto the surface to be passivated. To improve the protective quality of the film, SKS-65 GP(i) latex, or a solution of polyvinyl aubiral, or aqueous solution of an Mn, Fe, and P preparation (mazhef salt) is added to the passivating titanium solutions.

ASSOCIATION: Organizatsiya gosudarstvennogo komiteta po sudostrojeniyu SSSR  
(Organization of the State Committee on Ship Building, USSR)

SUBMITTED: 08May63

ENCL: 00

SUB CODE: 1P, 1B

NO REF Sov: 000

OTHER: 000

Card 1/1

L 38694-66 EWT(m)/EWP(j)/EWF(t)/ETI IJP(c) JD/WB/RM

ACC NR: AP6016745 (N) SOURCE CODE: UR/0229/65/000/012/0065/0069

AUTHOR: Iskra, Ye. V.; Sokolov, G. M.

ORG: None

TITLE: A primer for protecting bare metal from corrosion 4

SOURCE: Sudostroyeniye, no. 12, 1965, 65-69

TOPIC TAGS: corrosion, corrosion protection, corrosion resistance, rust preventative, paint, welding

ABSTRACT: Data are given from tests of the possibility for using tannin in aqueous solutions and in latex for passivating bare metal surfaces. The results show that an iron tannate film is formed when a bare steel surface is treated in tannate solution. This tannate film has good passivating properties. The iron tannate film is not very resistant to water and fails quickly under the effect of atmospheric precipitation. The low resistance to water and atmospheric precipitation disqualify it as a means for passivating metal and metal structures. The passivating compound KRT-1 based on latex and tannin compounds is capable of protecting metal from corrosion for a period of 12 to 14 months. Films of this new compound have been studied and the techniques for its use are recommended for shipbuilding. Tests show that a film of the compound KRT-1 on the surface of a metal does not have any detrimental effect on painting or welding operations. Orig. art. has: 9 tables.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 002/ OTH REF: 002

Card 1/1 vmb

UDC: 629.12.657

KUPTSIS, Anna Mikhaylovna; BASENKO, Margarita Anatol'yevna;  
SAPUNOVA, Tamara Alekseyevna; ISKRA, Ye.V., red.

[Protection of apparatus with paint and varnish coatings]  
Zashchita priborov lakokrasochnymi pokrytiiami. Lenin-  
grad, 1964. 22 p. (MIRA 17:11)

ISKRENKO, I.A.

Human Anatomy

Dissertation: "Abiology of the Peritoneal Cavity of the Human Organism." Cand Med Sci, Minsk State Medical Inst, 18 Mar 54. (Sovetskaya Belorussiya, Minsk, 7 Mar 54).

SO: SUM 213, 20 Sep 54

found in the region of the duodenum which were named duodenal and left duodenojejunal recesses. Two recesses were found next to the cecum. Abdominal recesses were encountered in males and females with variously shaped abdomens. In one case only were no recesses demonstrated. In 64.3% of cases. The shape of its cavity and its size, location and direction were variable. 7 types of recesses were

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Card : 1/2

-5-

S-1

USSR/Morphology of Man and Animals. Digestive System.

Abs Jour: Referat Zh.-Biol., No 1, 10 January 1958, 2826.

distinguished in the duodenum and duodenojejunal flexure. only in 9 cases were there no recesses next to the cecum. In 21 cases the right paracolic recess, and in 4 cases the left paracolic recess were found. In three cases paracolic recesses were found on the right and left sides. The intersigmoid recess was encountered in 59.3% of cases. Paracecal recesses were divided into upper and lower, ileocecal and retrocecal.

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CIA-RDP86-00513R000618910001-5

ISKRENSK, I.A.; REDINA, I.F.; SHOTT, A.V. (Minsk)

Second Conference of Surgeons in White Russia. Khirurgia  
no. 3:143-147 '63. (MIRA 16:5)  
(SURGERY--CONGRESSES)

APPROVED FOR RELEASE: 08/10/2001

CIA-RDP86-00513R000618910001-5"

ZINOV'YEV, V.N.; ZYMALEV, G.S.; ISKRENKO, I.V.

Working thin deposits at the Il'ich mine. Gor. zhur. no.4:23-26  
Ap '65. (MIRA 18:5)

1. Trest Dzerzhinskruda, Krivoy Rog.

ISKREZHITSKAYA, A. I.

"Study of the effect of some antibiotics and their combinations in the treatment of experimental diphtherial infection."

report submitted at the 13th All-Union Congress of Hygienists, Epidemiologists and Infectionists, 1959.

ISKRIC, S.

"Partition paper chromatography of some B-amino acids", p. 83 (Arhiv Za Kemiju., Vol. 24, 1952, Zagreb)

SO: Monthly List of ~~Received~~ Accessions, Library of Congress, September 1953, Uncl.  
East European Vol. 2, No 9

ISKRIC, S.

Chand B

# **YUGO.**

*f.* Note on ultraviolet spectra of some amino acids and their derivatives. S. Iuric (Vinkovci, Yugoslavia). *Acta Acad. Sci. 20*, 100-106 (1959) (in English). With the use of a Beckman DU quartz spectrophotometer there were studied the ultraviolet absorption spectra of phthalimidic, N-phthaloylglycine, N-phthaloylvaline,  $\alpha$ -phthalimidodibutyrylate acid,  $\beta$ -phthalimid- $\beta$ -ethylketone,  $\gamma$ -phthalimidobutyrylglycine,  $\alpha$ -phthalimidopropionaldehyde, phthalimidocrotonate,  $\gamma$ -phthalimidocrotonic acid, m. 218° (I), and  $\gamma$ -phthalimidocrotonic acid, m. 170°. It is concluded that the conformation of a trans isomer should be ascribed to I. N. Flavis.

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CIA-RDP86-00513R000618910001-5"

ISKRIC, S.  
YUGOSLAVIA / Organic Chemistry. Synthetic Organic  
Chemistry.

G

Abs Jour: Ref Zhur-Khimiya, No 18, 1956, 61045.

Author : D. Keglevic-Brovet, S. Kveder, S. Iskric.

Inst :  
Title : The Synthesis of  $^{14}\text{C}$  Labelled Serotonin [2-(5'-  
-hydroxy-indolyl-3')-ethylamine- $^{14}\text{C}$ ].

Orig Pub: Croat. chem. acta, 1957, 29, No 3-4, 351-355.

Abstract: With a view to study the metabolism, serotonin- $^{14}\text{C}$   
(I) was synthesized by the interaction of 5-benzyl-  
oxygramine sulfomethylate (II) with  $\text{NaCl}^{14}\text{N}$ , the  
reduction of 2-(5'-benzyloxiindolyl-3')-acetonit-  
ryl-[1- $^{14}\text{C}$ ] (III) with  $\text{LiAlH}_4$  to amine (IV) and

Card 1/4

YUGOSLAVIA / Organic Chemistry. Synthetic Organic  
Chemistry.

G

Abs Jour: Ref Zhur-Khimika, No 18, 1958, 61045.

**Abstract:** the debenzylation of IV to I. I was separated as a complex with creatinine sulfate. 1.1mmole of 5-benzyloxygramine in 2.5 ml of water and peroxide-free tetrahydrofuran (V) acidified with 1 drop of glacial CH<sub>3</sub>COOH is added drop by drop at 0° in the duration of 20 min. to 0.5 ml of (CH<sub>3</sub>O)<sub>2</sub>SO<sub>2</sub>, 0.5 ml. of water-free V and 1 drop of glacial CH<sub>3</sub>COOH, the mixture is stirred, and 12 hours later (0°) the yield of II is 98 to 100%. 1 mmole of NaCl<sup>14</sup>N (with an excess of 0.75 mole of NaOH), of radioactivity  $\alpha = 1$  mcurie, in 3 ml of water is added to the solution of 1.1 mole of II in 4 ml of water (without CO<sub>2</sub>), the mixture is neutralized with 1 n. H<sub>2</sub>SO<sub>4</sub> to pH = 11.9, heated 2.5 hours at 70 to 75°, and 4 hours later (20°) it is extracted with

Card 2/4

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YUGOSLAVIA / Organic Chemistry; Synthetic Organic  
Chemistry.

G

Abs Jour: Ref Zhur-Khimiya, No 18, 1958, 61045.

Abstract: water-free ether, evaporated in a  $N_2$  flow, and the residue is chromatographed on  $Al_2O_3$ , the yield of III is 82%. 216 mg of III and 0.5 g of  $LiAlH_4$  in ether produce IV, yield 74% referred to  $NaCl^{14}N$ . The solution of 0.74 mmole of IV in 15 ml of  $CH_3OH$  is debenzylized at 20° under atmospheric pressure on 200 mg of 10%-ual  $Pd/BaSO_4$ , the solution is acidified with 0.74 ml of 1 n.  $H_2SO_4$ , evaporated, the residue is dissolved in 4 ml of hot water, 0.74 mmole of creatinine and 0.74 ml of 1 n  $H_2SO_4$  are added, the mixture is heated at 50 to 60° (in a bath), 20 ml of acetone is added in portion

Card 3/4

YUGOSLAVIA / Organic Chemistry. Synthetic Organic  
Chemistry.

G

Abs Jour: Ref Zhur-Khimiya, No 18, 1958, 61045.

Abstract: under shaking, the mixture is left to age 12 hours  
at 0°; the yield of the creatininesulfate complex  
of I is 59% (referred to NaCl<sup>14</sup>N), melting point  
211 to 213°,  $\alpha = 0.69$  mcurie per 1 mmole.

Card 4/4

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ISKRIN, Mikh.

State Experimental Institute of Design and Construction of Coal  
Mining Machinery versus Arkushenko. Izobr. i rats. no.6:28-29 Je  
'61. (MIRA 14:6)

(Coal mining machinery)

"APPROVED FOR RELEASE: 08/10/2001

CIA-RDP86-00513R000618910001-5

ISKRIN, M.G. (Moskva)

Bioelement arsenic. Priroda 54 no.4:105 Ap '65.  
(MIRA 18:5)

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CIA-RDP86-00513R000618910001-5"

ISKRINA, N.

Founder of advanced piloting. Grazhd.av. 14 no.2:33 P '57.  
(MLRA 10:5)  
(Nesterov, Petr Nikolaevich, 1887-)

TSVILLING, M.Ya.; YAKHONTOV, Yu.A.; ISKRITSKAYA, L.I.; MOLODTS, V.N.;  
YEVGIN, A.D.; BLEDNEV, A.I., dotsent, kand.voyenno-morskikh  
nauk, kapitan 1 ranga, red.; KHUPENNIKOVA, I.A., red.;  
YAKIMOVICH, Yu.K., red.-leksikograf; KUZ'MIN, I.F., tekhn.red.

[German-Russian naval dictionary] Nemetsko-russkii voyenno-morskoi  
slovar'. Sost.M.IA.TSvilling i dr. Pod obshchei red. A.I.Bledneva.  
Moskva, Voen.izd-vo M-va obor.SSSR, 1961. 456 p.

(MIRA 14:3)

(German language--Dictionaries--Russian)  
(Naval art and science--Dictionaries)

ISKRITSKIY, D. Ye.

PHASE I

TREASURE ISLAND BIBLIOGRAPHICAL REPORT

AID 571 - I

BOOK

Authors: ISKRITSKIY, D. YE. and TSYDZIK, P. V.  
Full Title: LABORATORY MANUAL FOR AIRCRAFT STRUCTURAL MECHANICS  
Transliterated Title: Rukovodstvo k laboratornym rabotam po stroitel'noy mekhanike samoleta

PUBLISHING DATA

Originating Agency: None  
Publishing House: State Publishing House of the Defense Industry  
(Oborongiz). Main Editorial Office of Aviation Literature  
Date: 1948 No. pp.: 123 No. of copies: 6,000

Editorial Staff:

The authors express thanks for valuable help to the following:  
N. I. Marin, Doc. of Tech. Sci., A. M. Cheremukhin, Prof., Doc. of  
Tech. Sci., A. Yu. Romashevskiy, Prof., and B. T. Borodkin, Eng.,  
Senior laboratory worker of the Chair "Aircraft Structural  
Mechanics" of the Kuybyshev Aviation Institute.

PURPOSE: A manual for students of aviation institutes

TEXT DATA

Coverage: This book is concerned only with static tests. It acquaints  
students of aviation institutes who conduct laboratory work in the  
course of aircraft structural mechanics with: 1. loading equipment

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Rukovodstvo k laboratornym rabotam po  
stroitel'noy mehanike samoleta

AID 571 - I

and measuring instruments used in testing structural elements of an aircraft (two and three-dimensional girders, plates supported along a prescribed contour, double tee beams with thin web, open and multi-connected profiles and thin-walled beams with diaphragms); 2. methods of experimental verification of theoretical assumptions; 3. procedure in the performance of tests and processing of their results.

No. of References: 14 Russian, 1932-1947  
Facilities: Kuybyshev Aviation Institute; Central Aero-Hydrodynamical Institute - TsAGI.

2/2

ISKRITSKIY D.YE.

SLOBODKIN, M.I., professor, doktor tekhnicheskikh nauk; ISKRITSKIY, D.Ye.,  
dotsent, kandidat tekhnicheskikh nauk; SHITKO, I.M., otdelatvennyy  
redaktor; ALADOVA, Ye.I., tekhnicheskiy redaktor.

[Kinematics, dynamics and strength calculations for mine-hoist cages]  
Kinematika, dinamika i raschet na prochnost' kletei shakhtnogo podzemna.  
Moskva, Ugletekhizdat, 1954. 402 p.  
(Mine hoisting)